

## LEPTERIA, gen. nov.

*Male*.—Antennæ ciliated. Palpi porrect, hairy, twice the length of head, fringed above with longer hairs at base. Legs smoothly scaled. Fore wings: apex acute, outer margin oblique; vein 3 near lower angle, 4 from angle, 5 near angle; 6 below upper angle; 7 and 8 from upper angle; 9 and 10 stalked with 8. Hind wings: veins 3 and 4 stalked; 5 well above angle; 6 and 7 on short stalk.

Type of genus, *Rhyncholita ? viridicosta*, Schs. (A. M. N. H. 1912, p. 202).

## UPOTHENIA, gen. nov.

*Male*.—Antennæ pubescent, ciliate. Palpi obliquely ascending, slender, smoothly scaled, acuminate. Fore wings: apex acute; outer margin oblique; no areole; veins 7–10 stalked. Hind wing: veins 3 and 4 from lower angle; 5 well above lower angle; 6 and 7 from upper angle.

Type *Megachyta acutipennis*, Schs. (A. M. N. H. 1912, ix. p. 211).

II.—*New Species of Diptera in the Collection of the British Museum.* By GEOFFREY MEADE-WALDO, M.A.

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## PART IV.

THE following paper deals principally with points in the synonymy of known species, but four species and a variety are described for the first time.

In the *Ann. & Mag. Nat. Hist.* (8) vi. p. 100 (1910), I stated that no species of *Alastor* had been recorded from tropical Africa; but two species have been recently received from Cape Colony, and are here described, so that its occurrence further north may be confidently expected.

As before, all measurements of length are from the front of the head to the apex of the second abdominal segment.

## ISCHNOCÆLIA, Perkins.

In the *Ann. & Mag. Nat. Hist.* (8) vol. v. p. 38 (1910) this genus was synonymized with *Elimus*, Sauss., but it has

since been shown by Dr. R. C. L. Perkins that the mouth-parts of *Ischnocælia* are quite distinct from those of *Elimus*, a character which was overlooked at the time. The genera may be separated as follows:—

*Ischnocælia*.

Both maxillary and labial palpi 3-jointed; maxillary palpi very short, hardly as long as joint 2 of the labial palpi.

*Elimus*.

Maxillary palpi 6-jointed, labial palpi 4-jointed.

The two species described (*l. c.* pp. 38 & 40) as *Elimus ferrugineus* and *E. robustus* are both referable to *Ischnocælia*, of which *I. xanthochroma*, Perk. (*Proc. Hawaii. Ent. Soc.* p. 32, 1908), is the type species. *Elimus mackayensis*, M.-Waldo, remains in *Elimus*.

## RHAPHIDOGLOSSA, S. S. Saunders.

*Rhaphidoglossa flavo-ornata*, Cam.

*Rhaphidoglossa flavo-ornata*, Cam. *Trans. S. Afr. Philosoph. Soc.* vol. xv. pt. 4, p. 231 (1905). ♀.

*Rhaphidoglossa punctata*, M.-Waldo, *Ann. & Mag. Nat. Hist.* (8) vol. v. p. 34 (1910). ♂.

My species, described from the male, is certainly synonymous with *R. flavo-ornata*, Cam., of which species I have received a pair from Dr. Brauns, of Willowmore. It was suggested (*l. c.* p. 35) that *R. punctata* might be the male of *R. natalensis*, Sm., which species is exceedingly closely related to *R. flavo-ornata*, but may be distinguished from it by the subtubercular process in the middle of the anterior margin of the clypeus, which is not present in any specimen of *R. flavo-ornata* which has been examined. The yellow band at the base of the clypeus of *R. flavo-ornata* is wanting in Smith's type.

Dr. H. Brauns has bred this species commonly in South Africa, and has communicated some interesting facts concerning its life-history. The species excavates its cells in dry stems with a soft pulp, chiefly Liliaceæ, and makes simple partitions, provisioning its larvæ with small larvæ of Lepidoptera. The larvæ remain sometimes, when adult, two or three years motionless without pupating. The imagines do not leave the stem in the ordinary way, but each one perforates its cell sideways.

## ICARIA, Sauss.

In the 'Genera Insectorum' (family Vespidae) Dalla Torre has given names to the sections of Saussure (Stettin. ent. Zeit. vol. xiii. pp. 133 *et seq.*, 1862). In my paper on the Hymenoptera collected by the British Ornithologists' Union's Expedition to Dutch New Guinea (Ann. & Mag. Nat. Hist. (8) vol. ix. p. 446, 1912) some new species of *Icaria* were described to which subgeneric names were applied. It is necessary for me to designate types for these subgenera, as they must now be considered. In each case the first species mentioned by Saussure in his sections has been selected.

Subgenus *Icariastrum*, D. T. (Section I., Sauss.). Type:  
*Icaria opulenta*, Smith.

Subgenus *Icarielia*, D. T. (Section II., Sauss.). Type:  
*Icaria flavopicta*, Smith.

Subgenus *Icariola*, D. T. (Section III., Sauss.). Type:  
*Icaria gregaria*, Sauss.

## SYNAGRIS, Latr.

*Synagris cornuta*, L., var. *ugandæ*, var. nov.

♂. *S. cornutæ* similis, sed differt segmento secundo dorsali fascia flava ornato.

This fine insect, evidently an East-African variety of *S. cornuta*, is rendered most conspicuous by the broad pale yellow fascia at the base of the second abdominal tergite. The typical form of *S. cornuta* is subject to considerable variation in colour, some specimens being much more rufous than others; the East-African variety has the whole mesonotum black, and the first abdominal segment is rufous at the extreme base (Saussure's var. A) or else entirely black.

The horns on the mandibles of the type are well developed.

Length (to apex of second abdominal segment) 28 mm.

2 ♂♂, 2 ♀♀.

UGANDA: Entebbe (*Gowdey*), 18. viii. 1911 (type), ♂; banks of Nile, near Kakindu, 3400 feet, Aug. 1911, ♂ (mandibular horns rudimentary); Upper Buddu, W. of Victoria Nyanza, Sept. 1911, ♀. BRITISH EAST AFRICA: Ilala, Maramas District, 14 miles east of Mumias, 4500 feet, June 1911, ♀ (*S. A. Neave*). Presented by the Entomological Research Committee.

The female is similar, differing only in the usual sexual characters.

## ALASTOR, Lep.

*Alastor braunsi*, sp. n.

♀. Niger, rugose profundeque punctatus; segmentis primo (dorsali) et secundo (dorsali et laterale ventrali) anguste apicaleque flavofasciatis; pronoti angulis flavis; alis fuscis. Tegulis maximis, pedibus anterioribus intermediisque plerumque, ferrugineis. Segmenti mediani lateribus bituberculatis, postscutello area mediaque segmenti mediani, nitidis. Abdominis segmento secundo dorsali V-sulcato parum profundo.

Long. 9 mm.

♀. Black; the extreme anterior angles of the pronotum and narrow apical fasciæ on abdominal segments 1 (tergite) and 2 (tergite and laterally on sternite) pale yellow; tegulæ very large, ferruginous; anterior femora, tibiæ, and tarsi wholly, and intermediate and posterior femora and tibiæ partly, ferruginous. Wings fuscous.

Mandibles with four longitudinal carinæ, approximating apically; clypeus subtriangular, convex, apically truncate; pronotum truncate anteriorly, about as broad as head, widening towards tegulæ, lateral angles acute; scutellum separated from disc of mesonotum by a transverse suture and overhanging postscutellum; postscutellum shining; median segment with surface of its truncation medially shining, lateral angles produced to form two spines. First abdominal segment cupuliform; second segment somewhat constricted at base, the tergite with a broad, irregular, shallow furrow, widely V-shaped, the extreme apex of segment flat. Punctured—head, scape, thorax, and abdominal segments 1-3 coarsely and evenly, terminal abdominal segments finely. The whole covered with a fairly long and dense pale brown pubescence.

Length 9 mm.

1 ♀, 4 ♂♂.

SOUTH AFRICA: Willowmore, Cape Colony (*Dr. H. Brauns*), to whom the species is dedicated. *Dr. Brauns* informs me that the majority of his specimens of *Alastor* were caught when "bitten fast to a dry stem for night rest."

Females are rare.

♂. Strongly resembles the female, and has the clypeus black, an unusual feature in the males of this genus. The suture on the second tergite is more clearly defined in the males than in the unique female. The amount of ferruginous on the legs is subject to variation. The antennæ terminate in a hook.

*Alastor promontorii*, sp. n.

♀. Niger; angulis pronoti margine antico, segmentis primo (dorsali) et secundo fasciis apicalibus angustis, flavis. Mandibulis basi, apice clypeali, tegulis, pedibusque plerumque, ferrugineis. Alis semihyalinis.

Long. 7 mm.

♀. Black; angles of the anterior margin of pronotum laterally, narrow apical fasciæ on abdominal segments 1 (tergite) and 2 (tergite and sternite) pale yellow; clypeus at apex, mandibles (except the apex), tegulæ, legs for the most part ferruginous.

Wings fusco-hyaline. Mandibles long, 3-toothed; clypeus as broad as long, narrowly produced towards apex, truncate at apex. Pronotum truncate anteriorly; median segment subtruncate, lateral angles somewhat bluntly produced, each armed with a spine. First abdominal segment subpetiolate, as broad at apex as segment 2 at base; abdominal segment 2 cylindrical. Punctured, head and thorax coarsely, abdomen more finely.

Length 7 mm.

1 ♀, 5 ♂♂.

SOUTH AFRICA: Willowmore, Cape Colony (*Dr. H. Brauns*).

♂. Differs from the female in having the clypeus yellow, with an apical emargination, and the antennæ terminated in a hook; abdominal segment 1 subpetiolate, half as broad at apex as segment 2 at base.

## PTEROCHILUS, Klug.

*Pterochilus waltoni*, sp. n.

Niger, ochraceo-aurantiaco variegatus; capite thoraceque rugose punctatis; clypeo apice truncato; segmento mediano inermi; tegulis partim, segmentis dorsalibus 1-3 abdominis fasciis, femoribus apice tibiis tarsisque, ochraceo-aurantiacis. Alis hyalinis, costa infuscata.

Long. 10 mm.

♀. Black; a short line in the sinus of the eyes, a spot behind the eyes, anterior margin of pronotum laterally, outer half of tegulæ, irregular apical fasciæ on abdominal tergites 1-3, that on tergite 2 considerably the broadest, sternite 2 on the sides at apex, femora at extreme apex, tibiæ, and tarsi orange-ochraceous.

Wings hyaline, the costal area infuscate.

Head as broad as thorax; mandibles 5-toothed (including the large apical tooth and the basal tooth, which is very small and indistinct), furnished with long hairs on the outer side; clypeus truncate at apex, as broad as long, narrowly produced towards apex; hairs on labial palpi orange-ochraceous; pronotum truncate anteriorly, widening towards the tegulæ; disc of mesonotum with four carinæ terminating at its posterior margin; scutellum, postscutellum, and median segment rounded, unarmed.

First abdominal segment narrower than second, with a shallow longitudinal sulcus at apex. Head and thorax covered with deep, reticulate punctures; abdomen subnitidulous, with a few minute punctures; head, thorax, and abdominal segment 1 basally covered with an irregular griseous pubescence, thickest on the vertex and truncation of median segment.

Length 10 mm.

♂. Differs only in the usual sexual characters; the yellow clypeus is shallowly emarginate at apex.

TIBET: Gyangtse, 13,000 feet. Collected by H. J. Walton on the Tibet Expedition, 1903-4.

10 ♀♀, 2 ♂♂.

This striking form differs from the other species of *Pterochilus* from Western and Central Asia in the form of the clypeus, which is truncate at the apex. *P. aberrans*, *P. atrohirtus*, and *P. fuscolhirtus* all have the lateral angles acute (according to the descriptions) at the apex of the clypeus, while *P. eckloni* and *P. dalla-torrei* have the clypeus apically emarginate. In *P. crabroniformis* the median segment is laterally armed with tubercles.

*Pterochilus tibetanus*, sp. n.

Niger; duobus maculis postocularibus, pronoto antice, postscutello, segmentis dorsalibus 1-5 fasciis apicalibus, pallide flavis. Palpis labialibus ferrugineis. Segmento mediano inermi. Alis semi-hyalinis, costa infuscata.

Long. 10½ mm.

♀. Black; a small spot behind the eyes, the anterior margin of pronotum, postscutellum, narrow apical fasciæ on tergites 1-5, and sternite 2 on the side at apex lacteous white.

Labial palpi and hairs ferruginous. Wings subhyaline, the costal area infuscate.

Head as broad as thorax, mandibles with the teeth blunt; clypeus apically truncate, as broad as long, narrowly produced towards apex; postscutellum and median segment

truncate, surface of truncation of median segment laterally rounded.

Abdomen shining, first segment considerably narrower than second. Punctured, head and thorax coarsely, except postscutellum; postscutellum and abdomen minutely punctured. Covered with an irregular, long, pale pile, thickest on vertex and median segment.

Length  $10\frac{1}{2}$  mm.

TIBET: Phari (15,000 feet) to Gyangtse (13,000 feet); June 1904 (H. J. Walton).

6 ♀ ♀, 5 ♂ ♂.

♂. Differs from the female in having the following parts pale yellow: clypeus, scape beneath, lower part of the sinus of eye, mandibles along the outer edge, all the tibiæ on the outer side, and a spot on the anterior femora on outer side at apex. Last four joints of antennæ testaceous; last joint of tarsi and claws ferruginous.

The seventh tergite is emarginate at apex.

\* *Notes on the Vespidae of the Sjöstedt Kilimanjaro-Meru Expedition.*

Through the courtesy of Dr. Sjöstedt it has been possible to examine the collection of Vespidae made during his Kilimanjaro-Meru Expedition (1905-1906).

This collection was worked out by P. Cameron, and the results published in Sjöstedt's 'Zoologische Kilimandjaro-Meru Expedition,' Bd. ii. Abt. 8, pp. 169-196 (1910).

As is unfortunately often the case with this author, the work done is to be deplored, since it is only too evident that every insect not recognized at the first glance has been described as new.

The Vespidae are a widely spread and abundant family, and after every allowance has been made for the excellence of the localities visited, it is surely surprising to be told that of *forty-two species collected by the Expedition no less than thirty-five are new to science!*

Under the circumstances it is hardly surprising that a considerable amount of synonymy has been created.

*EUMENIDINÆ.*

LABUS, Sauss.

*Labus annulipes*, Cam. *l. c.* p. 182 (1910).

*Labus fragilis*, M.-Waldo, Ann. & Mag. Nat. Hist. (8) viii. p. 452 (1911).

*Labus maculicollis*, Cam. *l. c.* p. 181 (1910).

*Labus adelphus*, M.-Waldo, Ann. & Mag. Nat. Hist. (8) viii.  
p. 452 (1911).

*Labus crassinoda*, Cam.

*Eumenes crassinoda*, Cam. *l. c.* p. 181 (1910), certainly belongs to this genus.

#### EUMENES, F.

(*Eumenes erythrospila*, Cam. *l. c.* p. 178) = *Eumenes maxillosa*, de Geer (1773).

(*Eumenes meruensis*, Cam. *l. c.* p. 176) = *Eumenes lepeletieri*, Sauss. (1852).

The tubercles are present on the petiole of Cameron's type, notwithstanding his assertions to the contrary; colour distinctions are valueless in this variable species.

(*Eumenes variventris*, Cam. *l. c.* p. 180) = *Eumenes fenestralis*, Sauss. (1852) (type in British Museum).

#### RHYNCHIUM, Spin.

(*Rhynchium thomsoni*, Cam. *l. c.* p. 183) = *Rhynchium grayi*, Smith, var. with rufous markings.

The two insects agree perfectly in size and structure, and both have the clypeus apically carinate.

(*Rhynchium usambaraense*, Cam. *l. c.* p. 183, ♀) = ? *R. grayi*, subsp. *neavei*, M.-Waldo, Ann. & Mag. Nat. Hist. (8) viii. p. 456 (1911), ♂.

Cameron's species is certainly no more than a subspecies of *R. grayi*, and is almost certainly the female of the subsp. *neavei*, *mili*, from Nyasaland. In colour the two insects entirely agree, and *neavei* has the apex of the clypeus without carinæ, as in *R. usambaraense*. The insect described by Cameron as the male of *R. usambaraense* is possibly that of *R. thomsoni*, in which the apical part of the clypeus is somewhat carinate.



## ODYNERUS, Latr.

(*Odynerus pulchripilosellus*, Cam. l. c. p. 186) = *Odynerus 4-tuberculatus*, Sm. (1857).

It is difficult to understand why Cameron has made such confusion in dealing with the genera and subgenera under *Odynerus*. *Ancistrocerus*, Wesm., is given both generic and subgeneric rank in two consecutive species, and the same is true of *Nortonia*, which is also placed as a subgenus of *Odynerus* and *Ancistrocerus*!

The species of *Odynerus* described as new in the results of the Kilimanjaro-Meru Expedition may be separated by means of the following key:—

1. First abdominal segment with 1 or 2 transverse carinæ. (Subg. *Ancistrocerus*.) . . . . . 2.  
     First abdominal segment simple. (Subg. *Lionotus*.) . . . . . 6.
2. Abdominal segment 1 with 2 transverse carinæ. L. 7 mm. . . . . *massaicus*, ♀.  
     Abdominal segment 1 with 1 transverse carina . . . . . 3.
3. Larger insects, 10–12 mm. . . . . 4.  
     Smaller insects, 8 mm. . . . . 5.
4. Clypeus black and yellow; legs mostly black; whole insect covered with long dark hair; tegulæ black. . . . . *striativentris*, ♂.  
     Clypeus black; tibiæ and tarsi red; abdomen sparsely clothed with hair; tegulæ ferruginous . . . . . *lineaticollis*, ♀.  
     Pronotum ferruginous; postscutellum black. *maculiscapus*, ♂.  
     Pronotum black, anterior margin yellow; postscutellum yellow . . . . . *kibonotensis*, ♀.
6. Larger insects, 13–16 mm. . . . . 7.  
     Smaller insects, 10 mm. and less . . . . . 9.
7. Totally black, wings smoky . . . . . *cnemophilus*, ♀.  
     Otherwise coloured . . . . . 8.
8. Black; head, prothorax, postscutellum, and median segment ferruginous; wings hyaline at base, fusco-violaceous apically. *meyeri*, ♀.  
     Black and ferruginous; abdominal segments for most part with yellow apical fasciæ; tergites 1 and 2 with lateral, oval, yellow spots; abd. segment 2 ferruginous. Wings fulvo-hyaline, radial cell fuscous. *stiraspis*, ♂.
9. Postscutellum armed laterally with tubercles . . . . . 10.  
     Postscutellum unarmed . . . . . 11.
10. Black, with yellow markings; scutellum with two yellow marks . . . . . *armatiscutis*, ♀.  
     Ferruginous, with yellow markings; scutellum ferruginous . . . . . *pulchripilosellus*, ♀.  
     (= *4-tuberculatus*, Sm.).

- |  |   |
|--|---|
| 11. Abdominal segment 1 subpetiolate at apex, considerably narrower than second segment . . . . .  | 12.   |
| Abdominal segment 1 not subpetiolate, as broad apically as second segment . . . . .  | 13.   |
| 12. Black; anterior margin of pronotum and tegulae ferruginous; postscutellum and apical fasciae on abdominal segments 1 and 2 yellow; wings smoky . . . . .       | <i>rufo-4-pustulatus</i> , ♀.                         |
| Black; pronotum, scutellum, postscutellum, tegulae, and apical fasciae on abdominal segments ferruginous; wings hyaline, slightly fuscous in radial cell . . . . . | <i>curvirufolineatus</i> , ♂.                         |
| 13. Colours black and yellow; 7-8 mm. . . . .  | 14.   |
| Colours ferruginous and yellow; 10 mm. . . . .   | 16.   |
| 14. Clypeus and flagellum with some ferruginous coloration . . . . .   | 15.   |
| Clypeus yellow at base, black apically; flagellum black . . . . .  | <i>kilimandjaroensis</i> , ♀.                         |
| 15. Clypeus yellow and ferruginous; terminal joints of flagellum ferruginous beneath; scutellum and postscutellum with small lateral yellow spots . . . . .        | <i>sjöstedti</i> , ♀.                                 |
| Clypeus yellow; otherwise resembling <i>sjöstedti</i> , except in secondary sexual characters . . . . .  | <i>yngei</i> , ♂<br>(? <i>sjöstedti</i> , ♂).         |
| 16. Posterior margin of prothorax and postscutellum yellow . . . . .   | <i>meruensis</i> , ♂<br>(? <i>rotundiscutis</i> , ♂). |
| Prothorax and postscutellum entirely ferruginous . . . . .   | <i>rotundiscutis</i> , ♀.                             |

*VESPINÆ.*

*ICARIA*, Sauss.

(*Icaria africana*, Cam. l. c. p. 170, and *Icaria cariniscutis*, Cam. l. c. p. 171) are both *Icaria distigma*, Gerst. (1857).

In a short key to the three species of *Icaria* collected by the Expedition, Cameron gives points of difference in the shape of the petiole; but there is no such difference in reality. He was evidently misled by the fact that the abdomens of his two types hang at different angles from the median segment.

*I. africana* is a variety with the stigma black.

*BELONOGASTER*, Sauss.

(*Belonogaster erythrospilus*, Cam. l. c. p. 172) = *B. griseus*, F. (1775).

(*Belonogaster massaicus*, Cam. *l. c.* p. 171) = *B. dubius*, Kohl (1894), var. with ferruginous clypeus. Only inner margin of eyes yellow.

(*Belonogaster 6-maculatus*, Cam., ♂, *l. c.* p. 174) = *B. facialis*, Buys., ♂ (1908).

Cameron's type, a unique male, is in very poor condition.

#### PARAMISCHOCYTTARUS, Magretti.

##### *Paramischocyttarus africanus*.

*Tanyzetus africanus*, Cam. *l. c.* p. 195, described as the type of a new genus, is certainly this genus. Cameron places his genus in the Eumenidinae, or solitary wasps, but there is no justification for transferring *Paramischocyttarus* to this subfamily until our knowledge of the genus is considerably greater as regards nesting-habits &c.

*Paramischocyttarus* forms, together with *Ischnogaster*, as pointed out by Colonel Bingham (Fauna Brit. India, Hymen. vol. i. p. 375), a link between the social and solitary Vespidae as regards structural characters. Dr. P. Magretti has been kind enough to examine his type of the genus and confirms my observation that the intermediate tibiae are armed with two calcaria and the tarsal claws dentate. We know from the nest-habits of *Ischnogaster* that it is social in habits; so there is every reason to expect *Paramischocyttarus* has a similar life-history.

#### ISCHNOGASTEROIDES, Magretti.

On structural characters this genus should be placed in the solitary wasps or Eumenidinae, since Dr. P. Magretti informs me that there is only one calcar on the intermediate tibia and the tarsal claws are dentate. The clypeus is strongly Eumenid in appearance according to the figure. Unfortunately nothing is known of the nesting-habits.

### III.—*Descriptions and Records of Bees*.—XLVIII.

By T. D. A. COCKERELL, University of Colorado.

#### *Augochlora (Augochloropsis) charapina*, sp. n.

♀.—Head and thorax green; abdomen shining crimson. Exactly like the Mexican *A. subignita*, Ckll., except as